

SUBSTITUTE FORM PTO-1390

U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE

ATTORNEY'S DOCKET NUMBER

02894-525001

**TRANSMITTAL LETTER TO THE UNITED STATES
DESIGNATED/ELECTED OFFICE (DO/EO/US)
CONCERNING A FILING UNDER 35 U.S.C. 371**

U.S. APPLICATION NO. (If Known, see 37 CFR 1.5)

09/936880

INTERNATIONAL APPLICATION NO.

PCT/EP00/01789

INTERNATIONAL FILING DATE

2 March 2000

PRIORITY DATE CLAIMED

22 April 1999

TITLE OF INVENTION

CLEANING LIQUID CONTAINER WITH A FILTER ELEMENT FOR A CLEANING DEVICE

APPLICANT(S) FOR DO/EO/US

Jurgen Hoser and Alf Jahn

Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:

1. ☒ This is a **FIRST** submission of items concerning a filing under 35 U.S.C. 371.
2. ☐ This is a **SECOND** or **SUBSEQUENT** submission of items concerning a filing under 35 U.S.C. 371.
3. ☒ This is an express request to promptly begin national examination procedures (35 U.S.C. 371(f)).
4. ☐ The US has been elected by the expiration of 19 months from the priority date (PCT Article 31).
5. ☒ A copy of the International Application as filed (35 U.S.C. 371(c)(2))
 - a. ☒ is attached hereto (required only if not communicated by the International Bureau).
 - b. ☐ has been communicated by the International Bureau.
 - c. ☐ is not required, as the application was filed in the United States Receiving Office (RO/US).
6. ☒ An English language translation of the International Application as filed (35 U.S.C. 371(c)(2)).
7. ☒ Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371(c)(3))
 - a. ☐ are attached hereto (required only if not communicated by the International Bureau).
 - b. ☐ have been communicated by the International Bureau.
 - c. ☐ have not been made; however, the time limit for making such amendments has NOT expired.
 - d. ☒ have not been made and will not be made.
8. ☐ An English language translation of amendments to the claims under PCT Article 19 (35 U.S.C. 371(c)(3)).
9. ☒ An oath or declaration of the inventor(s) (35 U.S.C. 371(c)(4)).
10. ☐ An English language translation of the annexes to the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371(c)(5)).

Items 11 to 16 below concern other documents or information included:

11. ☒ An Information Disclosure Statement under 37 CFR 1.97 and 1.98.
12. ☒ An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included.
13. ☒ A FIRST preliminary amendment.
☐ A SECOND or SUBSEQUENT preliminary amendment.
14. ☐ A substitute specification.
15. ☐ A change of power of attorney and/or address letter.
16. ☐ Other items or information:

☐
☐
☐
☐
☐

CERTIFICATE OF MAILING BY EXPRESS MAIL

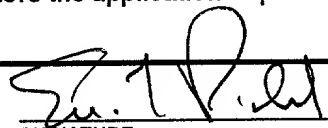
Express Mail Label No. EL245473686US

I hereby certify under 37 CFR §1.10 that this correspondence is being deposited with the United States Postal Service as Express Mail Post Office to Addressee with sufficient postage on the date indicated below and is addressed to the Commissioner for Patents, Washington, D.C. 20231

September 17, 2001
Date of Deposit

Signature

Derek Doherty
Typed Name of
Person Signing

| | | | | | |
|--|--------------|---|---------|--|----|
| U.S. A | | INTERNATIONAL APPLICATION NO. PCT/EP00/01789 | | ATTORNEY'S DOCKET NUMBER 02894-525001 | |
| 09/936880 | | 17. <input checked="" type="checkbox"/> The following fees are submitted: | | CALCULATIONS PTO USE ONLY | |
| Basic National Fee (37 CFR 1.492(a)(1)-(5)): Neither international preliminary examination fee (37 CFR 1.482) nor international search fee (37 CFR 1.445(a)(2)) paid to USPTO and International Search Report not prepared by the EPO or JPO \$1000 International preliminary examination fee (37 CFR 1.482) not paid to USPTO but International Search Report prepared by the EPO or JPO \$860 International preliminary examination fee (37 CFR 1.482) not paid to USPTO but international search fee (37 CFR 1.445(a)(2)) paid to USPTO \$710 International preliminary examination fee paid to USPTO (37 CFR 1.482) but all claims did not satisfy provisions of PCT Article 33(1)-(4) \$690 International preliminary examination fee paid to USPTO (37 CFR 1.482) and all claims satisfied provisions of PCT Article 33(1)-(4) \$100 ENTER APPROPRIATE BASIC FEE AMOUNT = | | | | | |
| Surcharge of \$130 for furnishing the oath or declaration later than <input type="checkbox"/> 20 <input type="checkbox"/> 30 months from the earliest claimed priority date (37 CFR 1.492(e)). | | | | \$0.00 | |
| Claims | Number Filed | Number Extra | Rate | | |
| Total Claims | 19 - 20 = | 0 | x \$18 | \$0.00 | |
| Independent Claims | 1 - 3 = | 0 | x \$80 | \$0.00 | |
| MULTIPLE DEPENDENT CLAIMS(S) (if applicable) | | | + \$270 | \$0.00 | |
| TOTAL OF ABOVE CALCULATIONS = | | | | \$860.00 | |
| <input type="checkbox"/> Applicant claims small entity status. See 37 CFR 1.27. The fees indicated above are reduced by 1/2. | | | | \$0.00 | |
| SUBTOTAL = | | | | \$860.00 | |
| Processing fee of \$130 for furnishing the English Translation later than <input type="checkbox"/> 20 <input type="checkbox"/> 30 months from the earliest claimed priority date (37 CFR 1.492(f)) | | | | \$0.00 | |
| TOTAL NATIONAL FEE = | | | | \$860.00 | |
| Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31). \$40.00 per property + | | | | \$40.00 | |
| TOTAL FEES ENCLOSED = | | | | \$900.00 | |
| | | | | Amount to be refunded: | \$ |
| | | | | Charged: | \$ |
| a. <input checked="" type="checkbox"/> A check in the amount of \$900.00 to cover the above fees is enclosed. b. <input type="checkbox"/> Please charge my Deposit Account No. 06-1050 in the amount of \$0.00 to cover the above fees. A duplicate copy of this sheet is enclosed. c. <input type="checkbox"/> The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. 06-1050. A duplicate copy of this sheet is enclosed. NOTE: Where an appropriate time limit under 37 CFR 1.494 or 1.495 has not been met, a petition to revive (37 CFR 1.137(a) or (b) must be filed and granted to restore the application to pending status. SEND ALL CORRESPONDENCE TO: Eric L. Prah FISH & RICHARDSON P.C. 225 Franklin Street Boston, Massachusetts 02110-2804 (617) 542-5070 phone (617) 542-8906 facsimile | | | | | |
| | | | | SIGNATURE :  Eric L. Prah NAME REGISTRATION NUMBER 32,590 | |

09/936880

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : Jurgen Hoser et al. Art Unit : Unknown
Serial No. : Examiner : Unknown
Filed :
Title : CLEANING LIQUID CONTAINER WITH A FILTER ELEMENT FOR A
CLEANING DEVICE

Commissioner for Patents
Washington, D.C. 20231

PRELIMINARY AMENDMENT

Prior to examination, please preliminarily amend the application as follows:

In the claims:

Amend claims 1-18 as follows:

--1. A cleaning liquid container for a cleaning device (RV) for cleaning an object for personal use, with an inlet provided on the housing of the cleaning liquid container, an outlet and a filter element for a cleaning liquid, wherein in the interior of the cleaning liquid container provision is made for a sedimentation line leading from the inlet to the outlet to allow solid particles to settle from the cleaning liquid.

2. The cleaning liquid container as claimed in claim 19, wherein the sedimentation line is formed by disposing at least one wall element in the interior.

3. The cleaning liquid container as claimed in claim 2, wherein the wall element between the inlet and the outlet is disposed in such a way as to ensure a separation of inflowing cleaning liquid and of cleaning liquid adapted to be aspirated by a conveying mechanism.

CERTIFICATE OF MAILING BY EXPRESS MAIL

Express Mail Label No. EL245473686US

I hereby certify under 37 CFR §1.10 that this correspondence is being deposited with the United States Postal Service as Express Mail Post Office to Addressee with sufficient postage on the date indicated below and is addressed to the Commissioner for Patents, Washington, D.C. 20231.

Date of Deposit

September 17, 2001

Signature

Derek Doherty

Typed or Printed Name of Person Signing Certificate

0936880-09401

4. The cleaning liquid container as claimed in claim 2, wherein the length of the sedimentation line is predeterminable by the shaping of the wall element.

5. The cleaning liquid container as claimed in claim 2, wherein the interior is divisible by the wall element into at least one first chamber and one second chamber, the inlet is assigned to the first chamber and the outlet to the second chamber, and an opening is provided which connects the first and the second chamber.

6. The cleaning liquid container as claimed in claim 5, wherein at least one wall element constructed as an overflow wall is provided in the interior of the cleaning liquid container.

7. The cleaning liquid container as claimed in claim 6, wherein the overflow wall is provided in at least one first and/or one second chamber.

8. The cleaning liquid container as claimed in claim 6, wherein the overflow wall is provided in the opening which connects the first chamber to the second.

9. The cleaning liquid container as claimed in claim 6, wherein the overflow wall is constructed as a rib.

10. The cleaning liquid container as claimed in claim 9, wherein wall elements constructed as ribs are provided on at least one inner wall of the cleaning liquid container.

11. The cleaning liquid container as claimed in claim 10, wherein the ribs are constructed as longitudinal partitions.

12. The cleaning liquid container as claimed in claim 10, wherein the ribs are constructed as transverse partitions.

09936800-091701

13. The cleaning liquid container as claimed in claim 10, wherein a honeycombtype wall structure is formed by means of ribs.

14. The cleaning liquid container as claimed in claim 13, wherein the honeycombtype wall structure formed by means of ribs is disposed on the housing floor wall.

15. The cleaning liquid container as claimed in claim 10, wherein at least one rib has comb teeth.

16. The cleaning liquid container as claimed in claim 19, wherein provision is made for ribs on at least one longitudinal wall.

17. The cleaning liquid container as claimed in claim 19, wherein the inlet and the outlet are disposed adjacent to each other in a common housing wall of the cleaning liquid container.

18. The cleaning liquid container as claimed in claim 19, wherein the inlet and the outlet are disposed in a spaced relationship to each other in a common housing wall of the cleaning liquid container, and at least two wall elements, each with at least one opening, are provided in order to form a long sedimentation line.

Add claim19:

--19. The cleaning liquid container as claimed in claim 1, wherein the object for personal use is the cutter head of a shaving apparatus.--

Applicant : Jurgen Hoser et al.
Serial No. :
Filed :
Page : 4

Attorney's Docket No.: 02894-525001 / BAG 06332

REMARKS

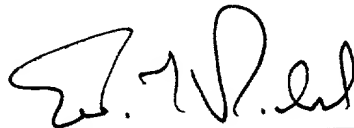
Attached is a marked-up version of the changes being made by the current amendment.

Applicants ask that all claims be examined. Please apply any charges not covered or credits to Deposit Account No. 06-1050.

Respectfully submitted,

Date:

September 17, 2001



Eric L. Prahl
Reg. No. 32,590

Fish & Richardson P.C.
225 Franklin Street
Boston, Massachusetts 02110-2804
Telephone: (617) 542-5070
Facsimile: (617) 542-8906

20315977.doc

09936860 "091701"

Version with markings to show changes made

In the claims:

Claims 1-18 have been amended as follows:

1. (Once Amended) A cleaning liquid container [(3)] for a cleaning device (RV) for cleaning an object[s] for personal use [as, for example, the cutter head of a shaving apparatus (R)], with an inlet [(15)] provided on the housing [(20)] of the cleaning liquid container [(3)], an outlet [(14)] and a filter element [(4)] for a cleaning liquid [(11)], [characterized in that] wherein in the interior [(10)] of the cleaning liquid container [(3)] provision is made for a sedimentation line leading from the inlet [(15)] to the outlet [(14)] to allow solid particles to settle from the cleaning liquid [(11)].

2. (Once Amended) The cleaning liquid container as claimed in claim 19 [1], [characterized in that] wherein the sedimentation line is formed by disposing at least one wall element [(30)] in the interior [(10)].

3. (Once Amended) The cleaning liquid container as claimed in [any one of the preceding] claim[s] 2, [characterized in that] wherein the wall element [(30)] between the inlet [(15)] and the outlet [(14)] is disposed in such a way as to ensure a separation of inflowing cleaning liquid [(11)] and of cleaning liquid [(11)] adapted to be aspirated by a conveying mechanism [(6)].

4. (Once Amended) The cleaning liquid container as claimed in [any one of the preceding] claim[s] 2, [characterized in that] wherein the length of the sedimentation line is predeterminable by the shaping of the wall element [(30)].

5. (Once Amended) The cleaning liquid container as claimed in [any one of the] claim[s] 1 to 4 2, [characterized in that] wherein the interior [(10)] is divisible by the wall element [(30)] into at least one first chamber [(50)] and one second chamber [(51)], [that] the inlet [(15)] is

0996880 091701

assigned to the first chamber [(50)] and the outlet [(14)] to the second chamber [(51)], and [that] an opening [(39)] is provided which connects the first and the second chamber [(50, 51)].

6. (Once Amended) The cleaning liquid container as claimed in [any one of the preceding] claim[s] 5, [characterized in that] wherein at least one wall element constructed as an overflow wall [(34)] is provided in the interior [(10)] of the cleaning liquid container [(3)].

7. (Once Amended) The cleaning liquid container as claimed in [any one of the preceding] claim[s] 6, [characterized in that] wherein the overflow wall [(34)] is provided in at least one first and/or one second chamber [(50, 51)].

8. (Once Amended) The cleaning liquid container as claimed in [any one of the preceding] claim[s] 6, [characterized in that] wherein the overflow wall [(34)] is provided in the opening [(39)] which connects the first chamber to the second [(50, 51)].

9. (Once Amended) The cleaning liquid container as claimed in [any one of the preceding] claim[s] 6, [characterized in that] wherein the overflow wall [(34)] is constructed as a rib [(37)].

10. (Once Amended) The cleaning liquid container as claimed in [any one of the preceding] claim[s] 19, [characterized in that] wherein wall elements [(30)] constructed as ribs [(31, 32, 33, 36, 37)] are provided on at least one inner wall of the cleaning liquid container [(3)].

11. (Once Amended) The cleaning liquid container as claimed in [any one of the preceding] claim[s] 10, [characterized in that] wherein the ribs [(32)] are constructed as longitudinal partitions.

12. (Once Amended) The cleaning liquid container as claimed in [any one of the preceding] claim[s] 10, [characterized in that] wherein the ribs [(33)] are constructed as transverse partitions.

093380 0889660

13. (Once Amended) The cleaning liquid container as claimed in [any one of the preceding] claim[s] 10, [characterized in that that] wherein a honeycombttype wall structure is formed by means of ribs [(36)].

14. (Once Amended) The cleaning liquid container as claimed in [any one of the preceding] claim[s] 13, [characterized in that] wherein the honeycombttype wall structure formed by means of ribs [(36)] is disposed on the housing floor wall [(21)].

15. (Once Amended) The cleaning liquid container as claimed in [any one of the preceding] claim[s] 10, [characterized in that] wherein at least one rib [(37)] has comb teeth.

16. (Once Amended) The cleaning liquid container as claimed in [any one of the preceding] claim[s] 19, [characterized in that] wherein provision is made for ribs [(31)] on at least one longitudinal wall [(27, 28)].

17. (Once Amended) The cleaning liquid container as claimed in [any one of the preceding] claim[s] 19, [characterized in that] wherein the inlet [(15)] and the outlet [(14)] are disposed adjacent to each other in a common housing wall [(23)] of the cleaning liquid container [(3)].

18. (Once Amended) The cleaning liquid container as claimed in [any one of the preceding] claim[s] 19, [characterized in that] wherein the inlet [(15)] and the outlet [(14)] are disposed in a spaced relationship to each other in a common housing wall [(23)] of the cleaning liquid container [(3)], and [that] at least two wall elements [(30)], each with at least one opening [(39)], are provided in order to form a long sedimentation line.

0936880 "091701

09/936880

5/ppts

Cleaning Liquid Container with a Filter Element for a Cleaning Device

This invention relates to a cleaning liquid container of the type indicated in the prior-art portion of claim 1.

5 A cleaning liquid container of the type initially referred to is known from printed specification WO 98/35581. The replaceable cleaning liquid container filled with a cleaning liquid has an inlet and an outlet as well as a filter housing which projects into the cleaning liquid and is equipped with a
10 filter element. Removably disposed in the interior of the filter housing are a conveying mechanism and a motor for driving the conveying mechanism. The solid particles which arise while cleaning a shaving head of a dry shaving apparatus flow with the cleaning liquid via the outlet into the interior of the cleaning
15 liquid container and can be sucked up together with cleaning liquid by the conveying mechanism both before and after they settle to the bottom of the cleaning liquid container. In the course of being sucked up, these solid particles settle on the outer wall of the filter element, forming a so-called filter
20 cake on the filter element and obstructing the sucking up of liquid by the conveying mechanism.

It is an object of the present invention to improve a cleaning liquid container of the type initially referred to.

25 According to the present invention this object is accomplished in a cleaning liquid container of the type initially referred to by the features of claim 1.

An essential advantage of the invention is that the cleaning liquid, which is contaminated with solid particles as it flows back from a cleaning device, is directed via a sedimentation

line leading from the inlet to the outlet in order to allow the entrained solid particles to settle. As the result of this sedimentation a large part of the solid particles settles from the cleaning liquid, forming a sediment along the line. Hence a
5 major part of the solid particles does not reach the filter element, resulting in a significantly reduced amount of filter cake being formed on the filter element.

According to a preferred embodiment of the invention provision is made for the sedimentation line to be formed by disposing
10 at least one wall element in the interior of the cleaning liquid container.

In a further aspect of this embodiment the wall element between the inlet and the outlet is disposed in such a way as to ensure a separation of inflowing cleaning liquid and of cleaning
15 liquid adapted to be aspirated by a conveying mechanism.

According to another preferred embodiment of the invention provision is made for the length of the sedimentation line to be predeterminable by the shaping of the wall element. In a further aspect of this embodiment provision is made for the interior of the cleaning liquid container to be divisible by the
20 wall element into at least one first chamber and one second chamber, for the inlet to be assigned to the first chamber and the outlet to the second chamber, and for an opening to connect the first and the second chamber.

A preferred embodiment of the invention is characterized in
25 that at least one wall element constructed as an overflow wall is provided in the interior of the cleaning liquid container.

In a further aspect of this embodiment the overflow wall is provided in at least one first and/or one second chamber. A
30 further embodiment is characterized in that the overflow wall is

provided in the opening which connects the first chamber to the second. The overflow wall is preferably constructed as a rib.

According to another preferred embodiment of the invention provision is made for wall elements constructed as ribs on at least one inner wall of the cleaning liquid container. In a further aspect of this embodiment the ribs are constructed as longitudinal partitions. A further embodiment is characterized in that the ribs are constructed as transverse partitions. An embodiment of the invention which is particularly suited for receiving and retaining segregated solid particles is characterized in that a honeycomb-type wall structure is formed by means of ribs. The honeycomb-type wall structure formed by means of ribs is preferably disposed on the housing floor wall of the cleaning liquid container.

A further embodiment of the invention is characterized in that at least one rib has comb teeth.

According to yet another embodiment of the invention provision is made for ribs on at least one longitudinal wall to allow solid particles to settle.

To create as long a sedimentation line as possible while using a wall element disposed in the interior of the cleaning liquid container, one embodiment of the invention provides for the inlet and the outlet to be disposed adjacent to each other in a common housing wall of the cleaning liquid container.

According to an alternative embodiment provision is made for the inlet and the outlet to be disposed in a spaced relationship to each other in a common housing wall of the cleaning liquid container, and for at least two wall elements, each with at least one opening, to be provided in the interior of the cleaning liquid container in order to form a long sedimentation line.

The cleaning liquid container of the present invention affords a plurality of advantages which will be explained in more detail in the following.

To sediment solid particles, e.g. stubble hairs, contained
5 in a cleaning liquid, the interior of the cleaning liquid container is equipped with a filter element through which the cleaning liquid, having been used in several cleaning cycles, is aspirated by means of a conveying mechanism. To increase the number of cleaning cycles before the cleaning liquid container
10 is replaced, the sedimentation of solid particles on the way from the inlet to the filter element is effected by a sedimentation line which is formed by suitably constructed and disposed wall elements. As the result of the sedimentation a large part of the solid particles is separated from the cleaning liquid and
15 hence does not reach the filter element and is unable therefore to form any filter cake there. The longer the sedimentation line, the fewer the solid particles which directly reach the filter element. Furthermore, the sedimentation of solid particles can be optimized by way of the number of partition-type and
20 rib-type wall elements fitted within the sedimentation line and by their arrangement and construction.

On account of the cleaning process, the cleaning liquid flowing back into the cleaning liquid container contains not only solid particles but also small air bubbles. These air
25 bubbles rise and leave the cleaning liquid as it proceeds along the sedimentation line, enabling bubble-free cleaning liquid to be aspirated by the conveying mechanism and fed to the cleaning process.

Through the sedimentation of solid particles it is possible,
30 with the same filter area, to significantly increase the number of cleaning cycles before needing to replace a cleaning liquid

container because the filter cake, which in time blocks the filter element, forms more slowly. With solid particles settling and accumulating on the wall elements disposed to form the sedimentation line, a substantially more efficient use of the cleaning liquid is ensured, particularly as the conveying mechanism can be immersed more deeply into the cleaning liquid container. Consequently, less than a third of the content of the cleaning liquid container remains in the cleaning liquid container for disposal when the cleaning liquid container is replaced after repeat use.

The sedimentation of solid particles is substantially promoted firstly by providing as long a flow path as possible for the cleaning liquid between the inlet 15, designed as the return opening, and the outlet 14, designed as the withdrawal opening. The arrangement of additional wall elements such as ribs and partitions in the interior of the cleaning liquid container causes said wall elements to act against the flow of the cleaning liquid, as the result of which the heavy constituents of the solid particles are separated from the liquid current. In addition it is possible to provide comb-type wall elements within the flow path, which in addition to the sedimentation line encourage the settling of solid particles. These rib-type and partition-type wall elements make the cleaning liquid container more rigid on the whole, preventing accordingly the cleaning liquid container from being deformed, particularly in transit. The honeycomb structure provided on the housing floor wall lends optimal rigidity to the cleaning liquid container with a minimum of material outlay, in addition to resulting in maximal sedimentation as a result of the numerous ribs forming the honeycomb structure. Furthermore, the ribs of the honeycomb structure prevent the already deposited dirt from being moved with the liquid current toward the filter element.

Further advantages and details of the present invention will become apparent from the subsequent description and the accompanying drawings illustrating preferred embodiments. In the drawings,

5 FIG. 1 is a longitudinal sectional view of a cleaning device with a replaceable cleaning liquid container;

FIG. 2 is a view of the upper housing wall of the cleaning liquid container showing an inlet and an outlet;

10 FIG. 3 is a perspective view of a cleaning liquid container with an inlet and an outlet;

FIG. 4 is a perspective view of the cleaning liquid container of FIG. 3 showing a part section through the upper housing wall, two longitudinal walls and a transverse wall connecting these, and through a wall element;

15 FIG. 5 is a view of one side of the housing floor wall equipped with a honeycomb-type wall structure and longitudinal partitions and transverse partitions;

20 FIG. 6 is a perspective view of a cleaning liquid container of FIG. 4 having a housing floor wall equipped with longitudinal partitions and transverse partitions;

FIG. 7 is a perspective view of a cleaning liquid container showing in longitudinal section and cross section the housing pot arranged on the housing floor wall;

25 FIG. 8 is a longitudinal sectional view of the cleaning liquid container, taken through the filter housing and an opening for the passage of a cleaning liquid;

FIG. 9 is a longitudinal sectional view of the cleaning liquid container, taken through the filter housing and an

opening for the passage of a cleaning liquid and an overflow wall provided in the opening; and

FIG. 10 is a longitudinal sectional view of the cleaning liquid container, taken through the filter housing and an opening for the passage of a cleaning liquid and an overflow wall with comb teeth, which is provided in the opening.

FIG. 1 shows a cleaning device RV for cleaning a shaving head SK of a shaving apparatus R with a housing 1, a holding device 2, a cleaning liquid container 3, a filter element 4, and a conveying mechanism 6 adapted to be driven by a motor 5 and having a supply pipe 7 leading to a cleaning cradle 8 and a liquid discharge conduit 9 leading from the cleaning cradle 8 to a replaceably disposed cleaning liquid container 3. The replaceable cleaning liquid container 3 with an integrated filter element 4 is arranged beneath the cleaning cradle 8 and above a wall 12 of the housing 1. The conveying mechanism 6 with the motor 5 is disposed in the cleaning device RV so that it can be removed from a filter housing 40 provided in the interior 10 of the cleaning liquid container 3 and can be inserted in said filter housing 40.

The inner curved face of the cleaning cradle 8 is shaped to conform approximately to the outer contour of a shaving head SK of a dry shaving apparatus R and receives only as much cleaning liquid as required for the particular cleaning operation. To support the shaving head SK it is possible for the bottom of the cleaning cradle 8 to be provided for example with two support elements 16 made of an elastic material. The cleaning cradle 3 has an overflow device 17 making sure that the cleaning liquid 11 in the cleaning cradle 3 does not exceed a certain level. This assures that only the shaving head SK or a part of the shaving head SK is surrounded by cleaning liquid 11 when the

cleaning device RV is in operation. In this embodiment the liquid discharge conduit 9 from the cleaning cradle 8 to the cleaning liquid container 3 is formed by an outlet 18 in the cleaning cradle 8, whose cross-sectional area of discharge can also be used to control the level of the cleaning liquid 11 in the cleaning cradle 8, and by an inlet 15 of, for example, a funnel-shaped configuration in the cleaning liquid container 3. The inlet 15 and the outlet 14 of the cleaning liquid container 3 can be closed by means of a closure - not shown - in order for example to transport the replaceable cleaning liquid container 3.

FIG. 2 shows a view of the housing wall 23 of the housing 20 of the cleaning liquid container 3. The inlet 15 and the outlet 14 are disposed adjacent to each other in the housing wall 23. Provision is also made for a filling opening 25 to fill the cleaning liquid container 3 with cleaning liquid 11 when the inlet 15 and the outlet 14 are closed by a closure. After the cleaning liquid container 3 is filled with cleaning liquid 11 the filling opening 25 is closed by means of a plug for example. Through the outlet 14 in the open state it is possible to see the cylindrically constructed wall of the filter housing 40 and the filter element 4 fastened to the end of the filter housing 40. Through the inlet 15 in the open state it is possible to see the housing floor wall 21, equipped with ribs 32, 33, 36, of the cleaning liquid container 3.

FIG. 3 shows a perspective view of the replaceable cleaning liquid container 3 of FIG. 2, on whose housing floor wall 21 is fastened the housing pot 22 in whose upper housing wall 23 are situated the inlet 15 and the outlet 14.

FIG. 4 shows a partial section through the upper housing wall 23 and through three of the circumferential side walls of

the housing pot 22, namely the longitudinal walls 27 and 28 and the transverse wall 26 of the cleaning liquid container 3. The partial section also runs through the middle of the outlet 14 serving as the withdrawal opening and through the filter housing 40 as well as through the inlet 15 serving as the return opening. The interior 10 of the cleaning liquid container 3 is divided by a wall element 30 into a first chamber 50 acting as an inflow compartment and a second chamber 51 acting as a suction compartment. The wall element 30 ends at a predetermined distance A - see FIG. 8 - to the transverse wall 26 of the cleaning liquid container 3, thus forming an opening 39 through which the cleaning liquid 11 is allowed to flow on its way from the inlet 15 associated with the first chamber 50 to the outlet 14 associated with the second chamber 51. In the interior 10 of the cleaning liquid container 3 provision is made for further wall elements along the sedimentation line leading from the inlet 15 to the outlet 14, which encourage solid particles to settle from the cleaning liquid 11. These wall elements are essentially constructed as ribs or partitions 31, 32, 33 and 36. Using the ribs 32, 33 and 36 it is possible to obtain various wall structures on the inner surface of the housing floor wall 21 of the cleaning liquid container 3.

The embodiment of FIG. 5 shows by way of example a combination of two different wall structures, namely a honeycomb-type wall structure obtained by means of the ribs 36 and having extend therethrough ribs 32 and 33 constructed as longitudinal partitions and transverse partitions. The ribs 32, 33 and 36 have a relatively low height, thus forming depressions in which the solid particles from the cleaning liquid 11 can settle and be retained by the ribs 32, 33 and 36. The wall elements constructed as ribs 31 - see FIG. 4 - are formed integrally with the longitudinal walls 27 and 28 of the cleaning liquid container 3 and extend for example as far as the transverse

partitions 33 on the housing floor wall 21 - see FIG. 5. The ribs 31 also encourage sedimentation, particularly the separation of solid particles from the liquid 11.

The wall element 30, which forms the sedimentation line and, by virtue of its shape, simultaneously determines the length of the sedimentation line, is fastened on the one hand partly to the inner surface of the housing wall 23 of the housing pot 22 and on the other hand partly to the housing floor wall 21 of the housing bottom, in such a way that a single-piece wall element 30 is formed after the housing pot 22 is joined to the housing floor wall 21 and a tight connection is subsequently made as by adhesive bonding and/or welding. The wall element 30 provided as a partition wall may be for example formed integrally with the housing pot 22 or with the housing floor wall 21. It will be understood that the shape of the wall element 30 is not restricted to the form illustrated in FIGS. 4 and 5. The length of extension of the wall element 30 may be varied, preferably extended, and with it the length of the sedimentation line by giving it a different shape, e.g. a sinuous shape.

The embodiment of a cleaning liquid container 3 of FIG. 6 differs from the embodiment of FIG. 4 in that the housing floor wall 21 is equipped for example with a rectangular wall structure made of ribs 32 and 33.

On the housing floor wall 21 a wall element constructed as a rib 37 is provided in the opening 39 between the wall element 30 and the transverse wall 26 in such a way that an overflow wall 34 - see FIGS. 6, 9 and 10 - is formed in the opening 39 - see FIG. 4 - and holds back for sedimentation any solid particles contained in the liquid 11 which are already at a level in the liquid flow that is below the top of the overflow wall.

FIG. 7 shows a section through the housing pot 22 disposed on the housing floor wall 21, namely through the inlet 15, the outlet 14 and through walls of the second chamber 51. The opening 39 provided between the transverse wall 26 and the wall element 30 extends as far as the honeycomb-type wall structure formed by the ribs 36, 32 and 33 and opens up a view from the second chamber 51 into the first chamber 50.

FIG. 8 shows a longitudinal section through a cleaning liquid container 3, namely through the circumferential side wall of the housing pot 22, through the wall of the filter housing 40, through the wall element 30, and through the housing floor wall 21. A wall structure made of wall elements in the form of ribs and/or partitions 32, 33, 36 is formed integrally with the housing floor wall 21 in the area of the filter housing 40. The filter housing 40 ends a relatively short distance from the housing floor wall 21, a filter element 4 being provided which closes the end of the filter housing 40 on the side close to the housing floor wall 21. A predetermined distance of the filter housing 40 and hence of the filter element 4 to the opposite housing floor wall 21 ensures that a sufficient amount of cleaning liquid 11 can be aspirated by the conveying mechanism 6 - see FIG. 1 - and fed to the cleaning cradle 8 via a supply pipe 7.

In the embodiment of FIG. 8 the opening 39 formed by the transverse wall 26 and the wall element 30 extends in vertical direction - direction of the arrow P - from the housing floor wall 21 as far as the upper housing wall 23, in which for example the filling opening 25 is provided.

Unlike the embodiment of a cleaning liquid container 3 according to FIG. 8, in the embodiment of FIG. 9 an overflow wall 34 formed by a rib 37 is provided in the opening 39 formed

by the wall element 30 and the transverse wall 26. The overflow wall 34 extends from the housing floor wall 21 toward the filling opening 25 - direction of the arrow P. Unlike the embodiment of FIG. 9, the overflow wall 34 formed as rib 37 is
5 equipped with comb teeth.

Patent Claims

1. A cleaning liquid container (3) for a cleaning device (RV) for cleaning objects for personal use as, for example, the cutter head of a shaving apparatus (R), with an inlet (15) provided on the housing (20) of the cleaning liquid container (3), an outlet (14) and a filter element (4) for a cleaning liquid (11), **characterized in that** in the interior (10) of the cleaning liquid container (3) provision is made for a sedimentation line leading from the inlet (15) to the outlet (14) to allow solid particles to settle from the cleaning liquid (11).

2. The cleaning liquid container as claimed in claim 1, **characterized in that** the sedimentation line is formed by disposing at least one wall element (30) in the interior (10).

3. The cleaning liquid container as claimed in any one of the preceding claims, **characterized in that** the wall element (30) between the inlet (15) and the outlet (14) is disposed in such a way as to ensure a separation of inflowing cleaning liquid (11) and of cleaning liquid (11) adapted to be aspirated by a conveying mechanism (6).

4. The cleaning liquid container as claimed in any one of the preceding claims, **characterized in that** the length of the sedimentation line is predeterminable by the shaping of the wall element (30).

5. The cleaning liquid container as claimed in any one of the claims 1 to 4, **characterized in that** the interior (10) is divisible by the wall element (30) into at least one first chamber (50) and one second chamber (51), that the inlet (15) is assigned to the first chamber (50) and the outlet (14) to the

second chamber (51), and that an opening (39) is provided which connects the first and the second chamber (50, 51).

6. The cleaning liquid container as claimed in any one of the preceding claims, **characterized in that** at least one wall element constructed as an overflow wall (34) is provided in the interior (10) of the cleaning liquid container (3).

7. The cleaning liquid container as claimed in any one of the preceding claims, **characterized in that** the overflow wall (34) is provided in at least one first and/or one second chamber (50, 51).

8. The cleaning liquid container as claimed in any one of the preceding claims, **characterized in that** the overflow wall (34) is provided in the opening (39) which connects the first chamber to the second (50, 51).

9. The cleaning liquid container as claimed in any one of the preceding claims, **characterized in that** the overflow wall (34) is constructed as a rib (37).

10. The cleaning liquid container as claimed in any one of the preceding claims, **characterized in that** wall elements (30) constructed as ribs (31, 32, 33, 36, 37) are provided on at least one inner wall of the cleaning liquid container (3).

11. The cleaning liquid container as claimed in any one of the preceding claims, **characterized in that** the ribs (32) are constructed as longitudinal partitions.

12. The cleaning liquid container as claimed in any one of the preceding claims, **characterized in that** the ribs (33) are constructed as transverse partitions.

13. The cleaning liquid container as claimed in any one of the preceding claims, **characterized in that** that a honeycomb-type wall structure is formed by means of ribs (36).

14. The cleaning liquid container as claimed in any one
5 of the preceding claims, **characterized in that** the honeycomb-type wall structure formed by means of ribs (36) is disposed on the housing floor wall (21).

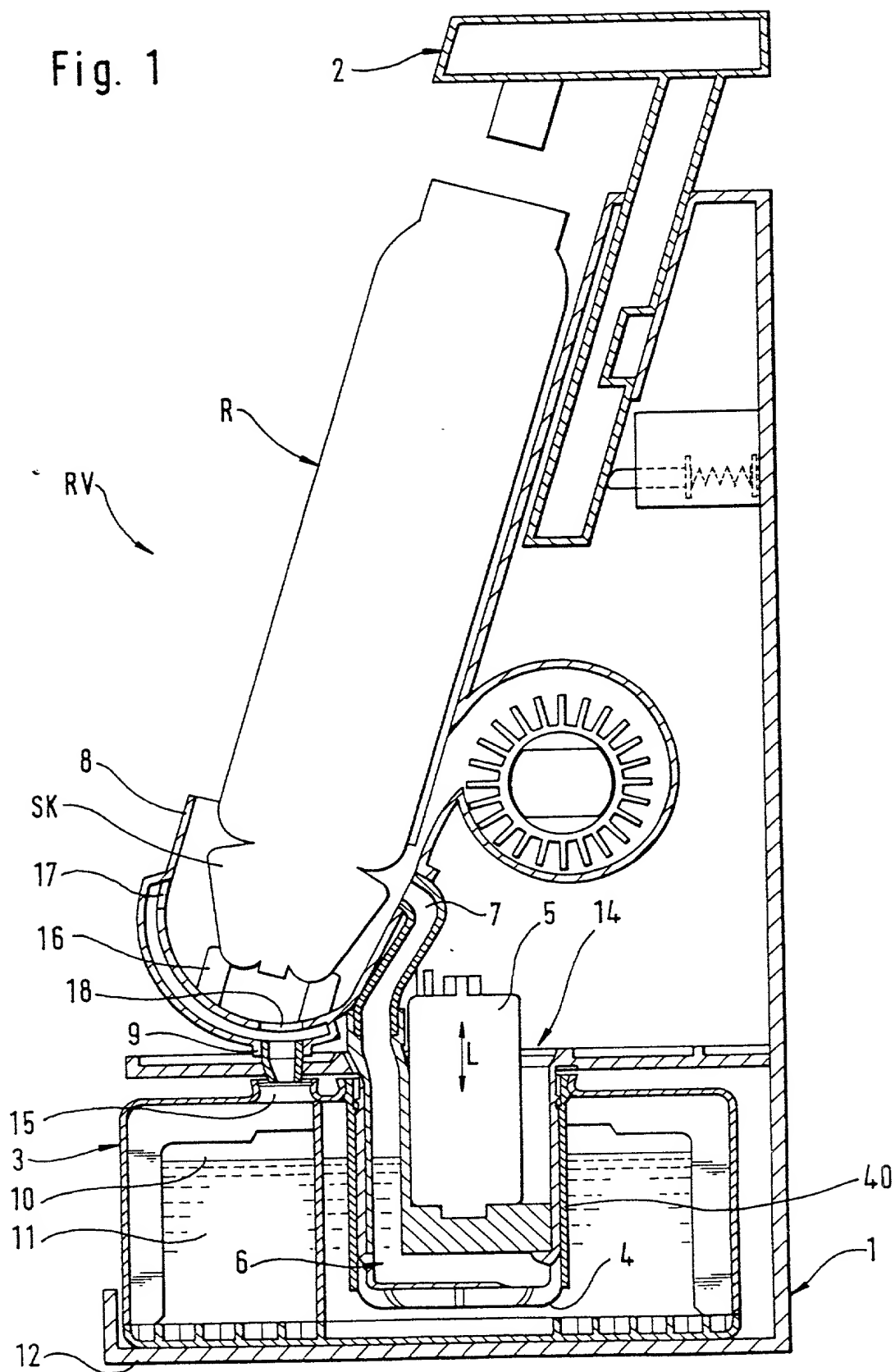
15. The cleaning liquid container as claimed in any one
10 of the preceding claims, **characterized in that** at least one rib (37) has comb teeth.

16. The cleaning liquid container as claimed in any one of the preceding claims, **characterized in that** provision is made for ribs (31) on at least one longitudinal wall (27, 28).

17. The cleaning liquid container as claimed in any one
15 of the preceding claims, **characterized in that** the inlet (15) and the outlet (14) are disposed adjacent to each other in a common housing wall (23) of the cleaning liquid container (3).

18. The cleaning liquid container as claimed in any one
20 of the preceding claims, **characterized in that** the inlet (15) and the outlet (14) are disposed in a spaced relationship to each other in a common housing wall (23) of the cleaning liquid container (3), and that at least two wall elements (30), each with at least one opening (39), are provided in order to form a long sedimentation line.

Fig. 1



09/036980

2/5

Fig. 2

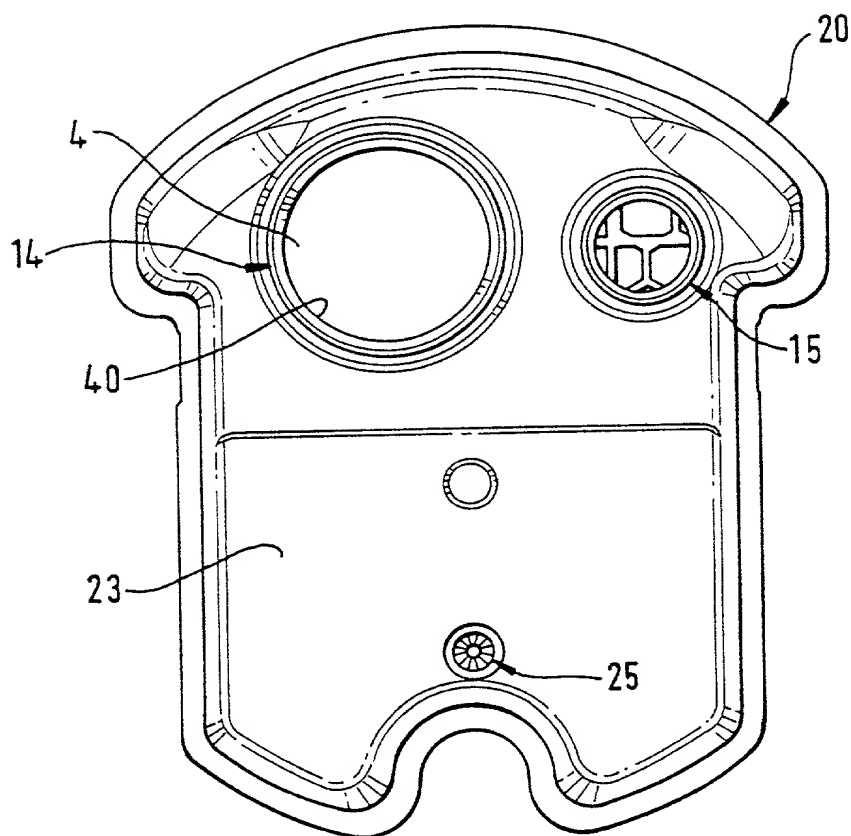
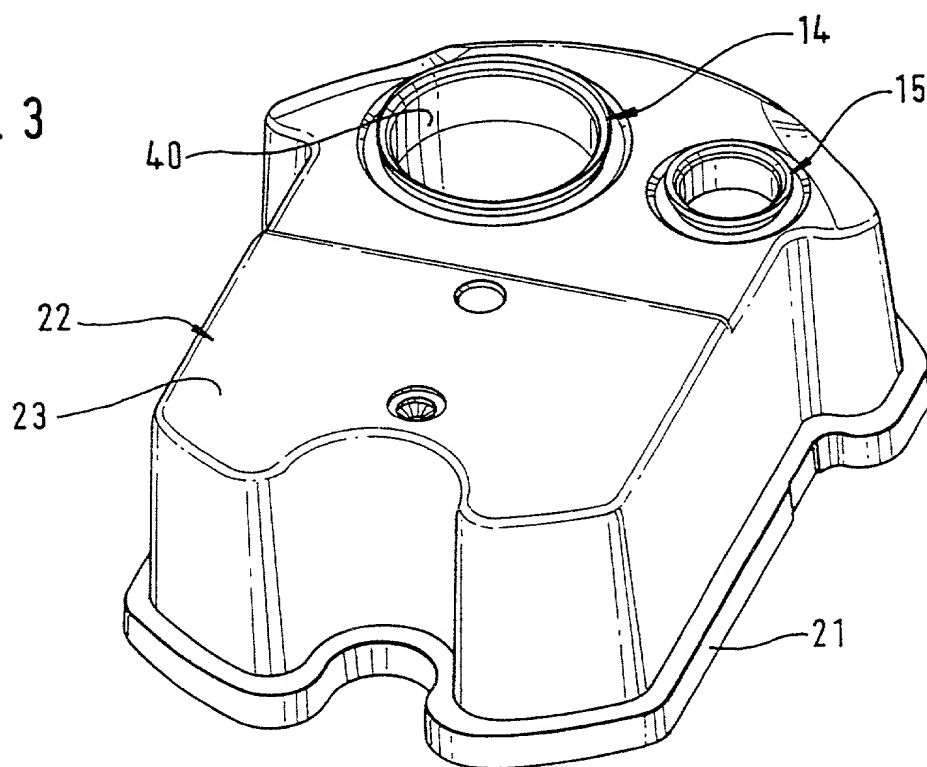


Fig. 3



09/936880

3/5

Fig. 4

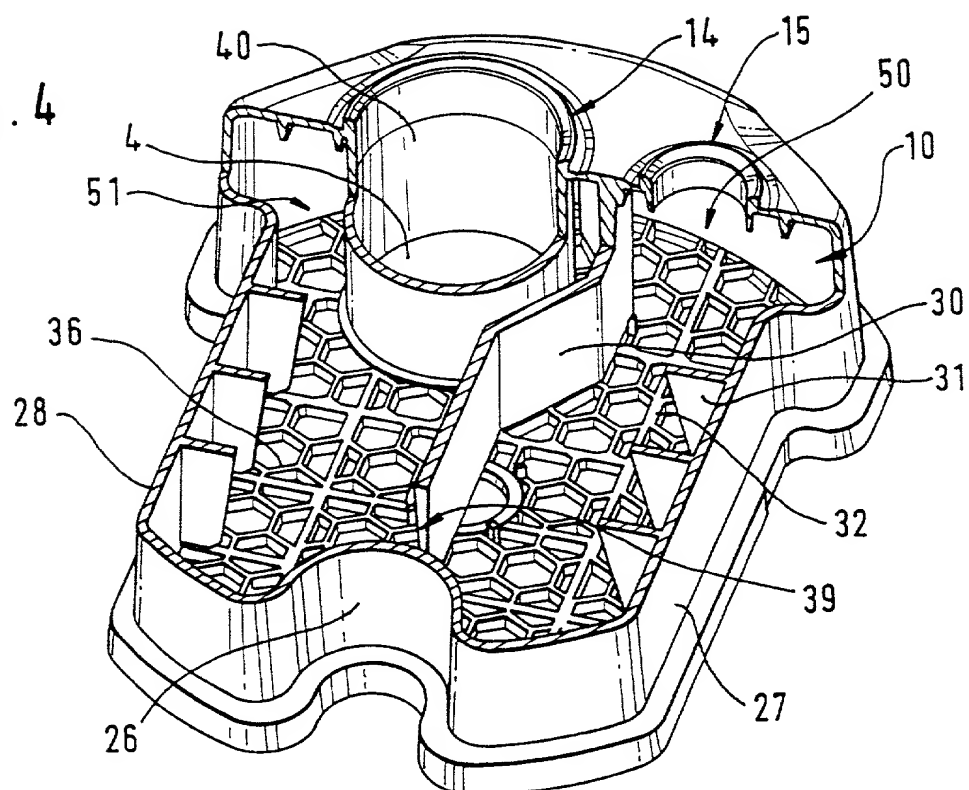
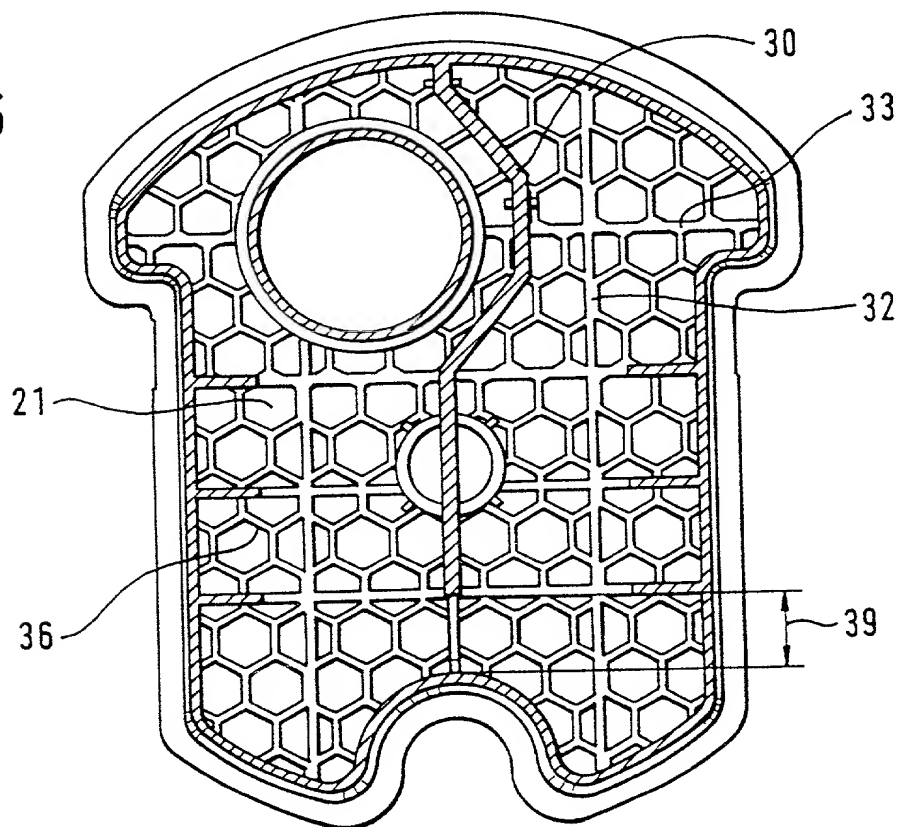


Fig. 5



09-936000

4/5

Fig. 6

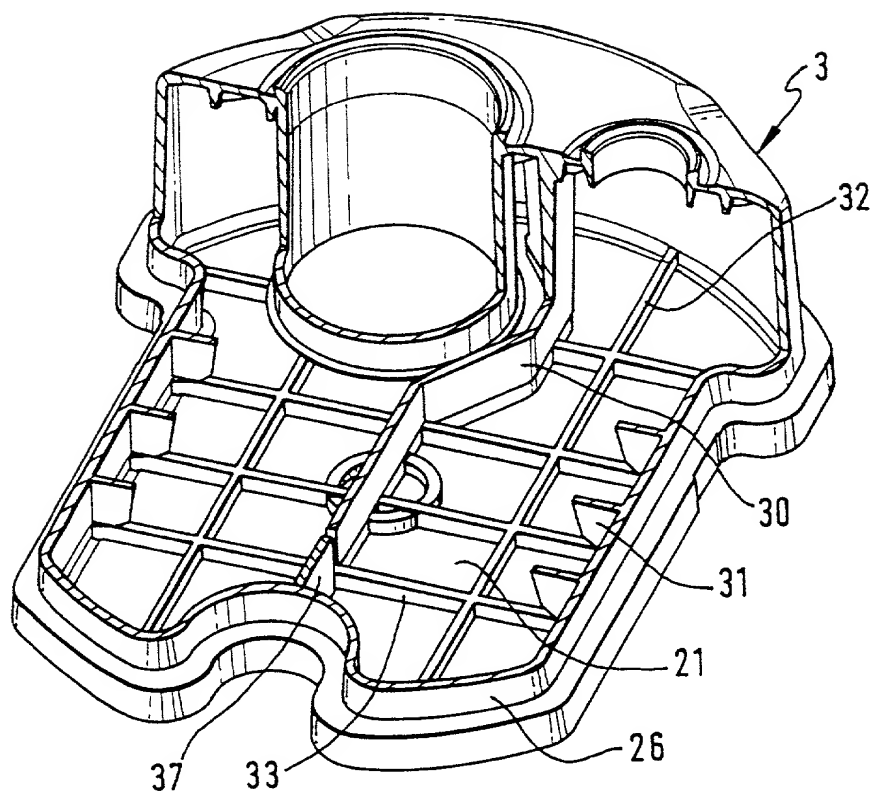
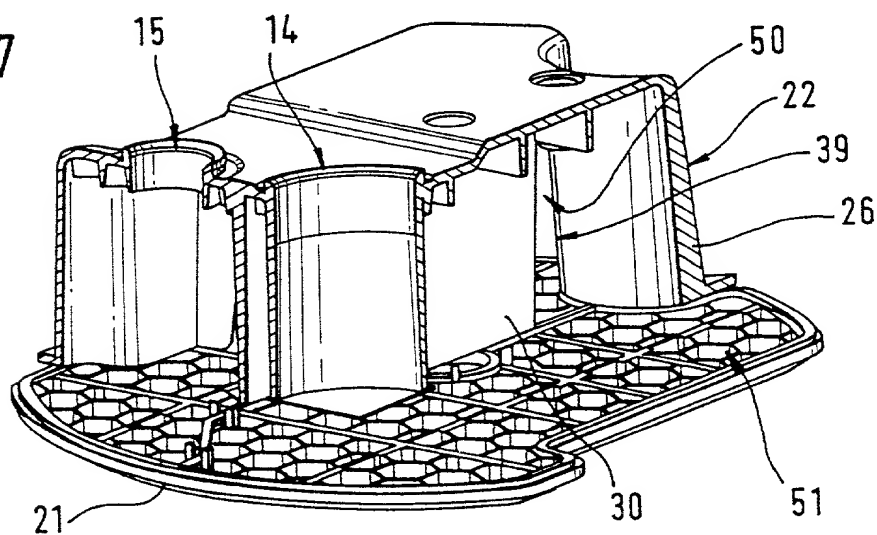


Fig. 7



5/5

Fig. 8

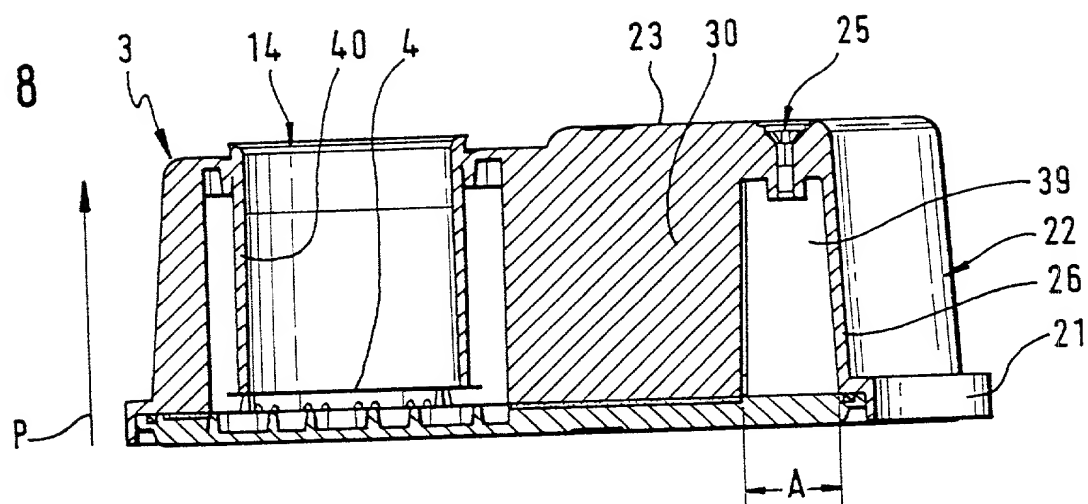


Fig. 9

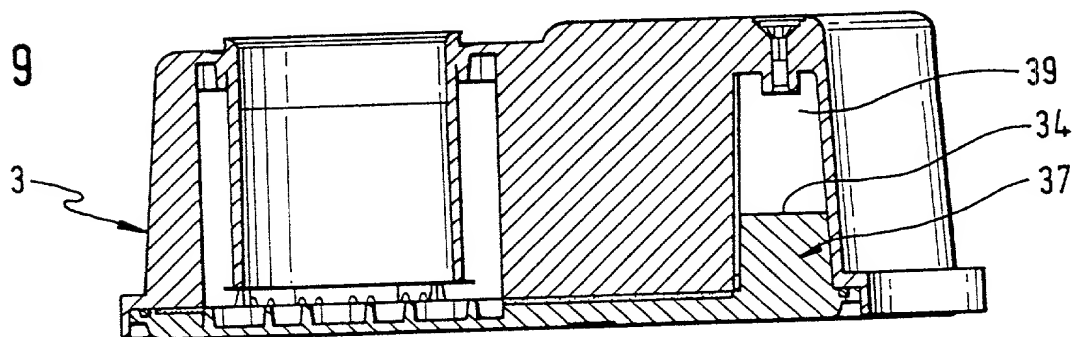
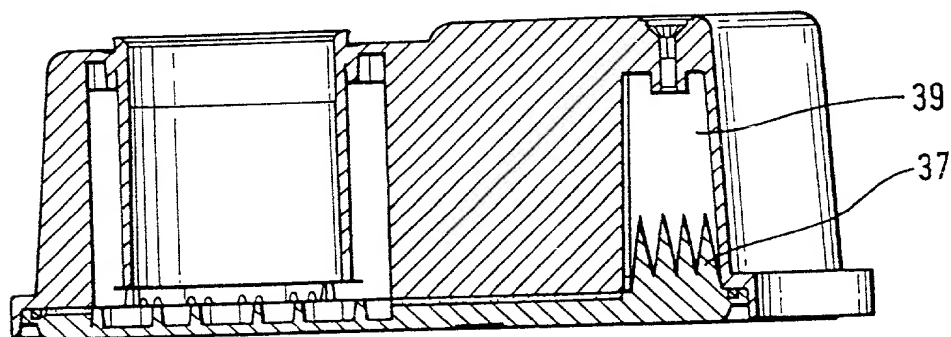


Fig. 10



Declaration and Power of Attorney for Patent Application

Erklärung für Patentanmeldungen mit Vollmacht

06332

German Language Declaration

Als nachstehend benannter Erfinder erkläre ich hiermit an Eides Statt:

daß mein Wohnsitz, meine Postanschrift und meine Staatsangehörigkeit den im nachstehenden nach meinem Namen aufgeführten Angaben entsprechen, daß ich nach bestem Wissen der ursprüngliche, erste und alleinige Erfinder (falls nachstehend nur ein Name angegeben ist) oder ein ursprünglicher, erster und Miterfinder (falls nachstehend mehrere Namen aufgeführt sind) des Gegenstandes bin, für den dieser Antrag gestellt wird und für den ein Patent für die Erfindung mit folgendem Titel beantragt wird:

Reinigungsflüssigkeitsbehälter mit einem
Filterelement für eine Reinigungsvor-
richtung

deren Beschreibung hier beigelegt ist, es sei denn (in diesem Falle Zutreffendes bitte ankreuzen), diese Erfindung

☐ wurde angemeldet am _____
unter der US-Anmeldenummer oder unter der
Internationalen Anmeldenummer im Rahmen des
Vertrags über die Zusammenarbeit auf dem Gebiet
des Patentwesens (PCT)
_____ und am
_____ abgeändert (falls
zutreffend).

Ich bestätige hiermit, daß ich den Inhalt der oben angegebenen Patentanmeldung, einschließlich der Ansprüche, die eventuell durch einen oben erwähnten Zusatzantrag abgeändert wurde, durchgesehen und verstanden habe.

Ich erkenne meine Pflicht zur Offenbarung jeglicher Informationen an, die zur Prüfung der Patentfähigkeit in Einklang mit Titel 37, Code of Federal Regulations, § 1.56 von Belang sind.

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated next to my name.

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled

Cleaning Liquid Container with a Filter
Element for a Cleaning Device

the specification of which is attached hereto unless the following box is checked:

☐ was filed on _____
as United States Application Number or PCT
International Application Number
_____ and was amended on
_____ (if applicable).

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to patentability as defined in Title 37, Code of Federal Regulations, § 1.56.

German Language Declaration

Ich beanspruche hiermit ausländische Prioritätsvorteile gemäß Title 35, US-Code, § 119 (a)-(d), bzw. § 365(b) aller unten aufgeführten Auslandsanmeldungen für Patente oder Erfinderurkunden, oder § 365(a) aller PCT internationalen Anmeldungen, welche wenigstens ein Land ausser den Vereinigten Staaten von Amerika benennen, und habe nachstehend durch ankreuzen sämtliche Auslandsanmeldungen für Patente bzw. Erfinderurkunden oder PCT internationale Anmeldungen angegeben, deren Anmeldetag dem der Anmeldung, für welche Priorität beansprucht wird, vorangeht.

Prior Foreign Applications
(Frühere ausländische Anmeldungen)

19918287.6 Germany

(Number)
(Nummer)

(Country)
(Land)

(Number)
(Nummer)

(Country)
(Land)

Ich beanspruche hiermit Prioritätsvorteile unter Title 35, US-Code, § 119(e) aller US-Hilfsanmeldungen wie unten aufgezählt.

(Application No.)
(Aktenzeichen)

(Filing Date)
(Anmeldetag)

(Application No.)
(Aktenzeichen)

(Filing Date)
(Anmeldetag)

Ich beanspruche hiermit die mir unter Title 35, US-Code, § 120 zustehenden Vorteile aller unten aufgeführten US-Patentanmeldungen bzw. § 365(c) aller PCT internationalen Anmeldungen, welche die Vereinigten Staaten von Amerika benennen, und erkenne, insofern der Gegenstand eines jeden früheren Anspruchs dieser Patentanmeldung nicht in einer US-Patentanmeldung, bzw. PCT internationalen Anmeldung in in einer gemäß dem ersten Absatz von Title 35, US-Code, § 112 vorgeschriebenen Art und Weise offenbart wurde, meine Pflicht zur Offenbarung jeglicher Informationen an, die zur Prüfung der Patentfähigkeit in Einklang mit Title 37, Code of Federal Regulations, § 1.56 von Belang sind und die im Zeitraum zwischen dem Anmeldetag der früheren Patentanmeldung und dem nationalen oder im Rahmen des Vertrags über die Zusammenarbeit auf dem Gebiet des Patentwesens (PCT) gültigen internationalen Anmeldetags bekannt geworden sind.

PCT/EP00/01789 March 2, 2000

(Application No.)
(Aktenzeichen)

(Filing Date)
(Anmeldetag)

(Application No.)
(Aktenzeichen)

(Filing Date)
(Anmeldetag)

Ich erkläre hiermit, daß alle in der vorliegenden Erklärung von mir gemachten Angaben nach bestem Wissen und Gewissen der Wahrheit entsprechen, und ferner daß ich diese eidesstattliche Erklärung in Kenntnis dessen ablege, daß wissentlich und vorsätzlich falsche Angaben oder dergleichen gemäß § 1001, Title 18 des US-Code strafbar sind und mit Geldstrafe und/oder Gefängnis bestraft werden können und daß derartige wissentlich und vorsätzlich falsche Angaben die Rechtswirksamkeit der vorliegenden Patentanmeldung oder eines aufgrund deren erteilten Patentes gefährden können.

I hereby claim foreign priority under Title 35, United States Code, § 119(a)-(d) or § 365(b) of any foreign application(s) for patent or inventor's certificate, or § 365(a) of any PCT International application which designated at least one country other than the United States, listed below and have also identified below, by checking the box, any foreign application for patent or inventor's certificate, or PCT International application having a filing date before that of the application on which priority is claimed.

Priority Not Claimed
Priorität nicht beansprucht

April 22, 1999

(Day/Month/Year Filed)
(Tag/Monat/Jahr der Anmeldung)

(Day/Month/Year Filed)
(Tag/Monat/Jahr der Anmeldung)

I hereby claim the benefit under Title 35, United States Code, § 119(e) of any United States provisional application(s) listed below.

I hereby claim the benefit under Title 35, United States Code, § 120 of any United States application(s), or § 365(c) of any PCT International application designating the United States, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT International application in the manner provided by the first paragraph of Title 35, United States Code, § 112, I acknowledge the duty to disclose information which is material to patentability as defined in Title 37, Code of Federal Regulations, § 1.56 which became available between the filing date of the prior application and the national or PCT International filing date of this application.

Pending

(Status) (patented, pending, abandoned)
(Status) (patentiert, schwebend, aufgegeben)

(Status) (patented, pending, abandoned)
(Status) (patentiert, schwebend, aufgegeben)

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

German Language Declaration

VERTRETUNGSVOLMACHT: Als benannter Erfinder beauftrage ich hiermit den (die) nachstehend aufgeführten Patentanwalt (Patentanwälte) und/oder Vertreter mit der Verfolgung der vorliegenden Patentanmeldung sowie mit der Abwicklung aller damit verbundenen Angelegenheiten vor dem US-Patent- und Markenamt: (Name(n) und Registrationsnummer(n) auflisten)

POWER OF ATTORNEY: As a named inventor, I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith: (list name and registration number)

Donal B. Tobin (Reg. No. 25,711)
Paul I. Douglas (Reg. No. 31,244)
Chester Cekala (Reg. No. 32,971)
Stephan P. Williams (Reg. No. 28,546)
Edward S. Podszus (Reg. No. 35,983)
Charles P. Boukus, Jr. (Reg. No. 24,754)
William E. Booth (Reg. No. 28,933)
David Howley (Reg. No. 34,624)
Thomas G. Krivulka (Reg. No. 38,525)

Postanschrift:

Send Correspondence to:
Edward S. Podszus
The Gillette Company
Prudential Tower Building
Boston, MA 02199

Telefonische Auskünfte: (Name und Telefonnummer)

Direct Telephone Calls to: (name and telephone number)
Edward S. Podszus (617) 421-7939

| | |
|--|---|
| Vor- und Zuname des einzigen oder ersten Erfinders <u>Jürgen Hoser</u> | Full name of sole or first inventor _____ |
| Unterschrift des Erfinders <u>[Signature]</u> Datum <u>27. Juli 2001</u> | Inventor's signature _____ Date _____ |
| Wohnsitz <u>Auf dem Pfarrdriesch 9b, D-61267</u> | Residence _____ |
| Staatsangehörigkeit <u>German</u> | Citizenship <u>Neu-Anspach, Germany</u> |
| Postanschrift <u>Same</u> | Post Office Address _____ |
| | |
| Vor- und Zuname des zweiten Miterfinders (falls zutreffend) <u>Alf Jahn</u> | Full name of second joint inventor, if any _____ |
| Unterschrift des zweiten Erfinders <u>[Signature]</u> Datum <u>22.3.01</u> | Second Inventor's signature _____ Date _____ |
| Wohnsitz <u>Handelstraße 19, D-06114 Halle/Saale</u> | Residence <u>Germany</u> |
| Staatsangehörigkeit <u>German</u> | Citizenship <u>Germany</u> |
| Postanschrift <u>Same</u> | Post Office Address _____ |

(Im Falle dritter und weiterer Miterfinder sind die entsprechenden Informationen und Unterschriften hinzuzufügen.)

(Supply similar information and signature for third and subsequent joint inventors.)